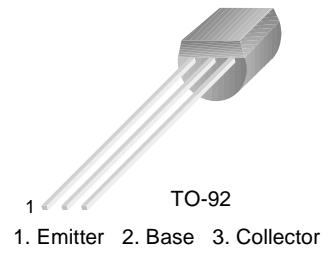


KSP44/45

High Voltage Transistor

- Collector-Emitter Voltage: $V_{CEO}=KSP44: 400V$
 $KSP45: 350V$
- Collector Power Dissipation: P_C (max)=625mW



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_a=25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : KSP44 : KSP45	500 400	V
V_{CEO}	Collector-Emitter Voltage : KSP44 : KSP45	400 350	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	300	mA
P_C	Collector Power Dissipation ($T_a=25^\circ C$)	625	mW
P_C	Collector Power Dissipation ($T_C=25^\circ C$)	1.5	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

Electrical Characteristics $T_a=25^\circ C$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage : KSP44 : KSP45	$I_C=100\mu A, I_B=0$	500 400		V
BV_{CEO}	* Collector -Emitter Breakdown Voltage : KSP44 : KSP45	$I_C=1mA, I_B=0$	400 350		V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=100\mu A, I_C=0$	6		V
I_{CBO}	Collector Cut-off Current : KSP44 : KSP45	$V_{CB}=400V, I_E=0$ $V_{CB}=320V, I_E=0$		0.1 0.1	μA
I_{CES}	Collector Cut-off Current : KSP44 : KSP45	$V_{CE}=400V, I_B=0$ $V_{CE}=320V, I_B=0$		0.5 0.5	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=4V, I_C=0$		0.1	μA
h_{FE}	* DC Current Gain	$V_{CE}=10V, I_C=1mA$ $V_{CE}=10V, I_C=10mA$ $V_{CE}=10V, I_C=50mA$ $V_{CE}=10V, I_C=100mA$	40 50 45 40	200	
$V_{CE}(\text{sat})$	* Collector-Emitter Saturation Voltage	$I_C=1mA, I_B=0.1mA$ $I_C=10mA, I_B=1mA$ $I_C=50mA, I_B=5mA$		0.4 0.5 0.75	V
$V_{BE}(\text{sat})$	* Base-Emitter Saturation Voltage	$I_C=10mA, I_B=1mA$		0.75	V
C_{ob}	Output Capacitance	$V_{CB}=20V, I_E=0, f=1MHz$		7	pF

* Pulse Test: $PW \leq 300\mu s$, Duty Cycle $\leq 2\%$

Typical Characteristics

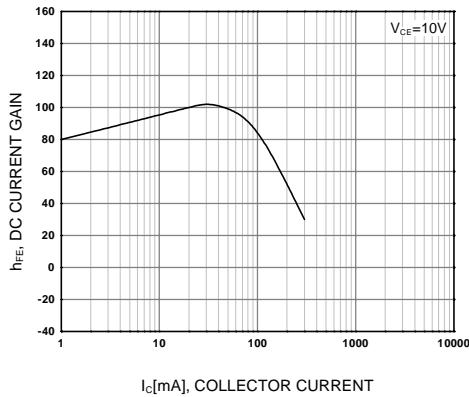


Figure 1. DC current Gain

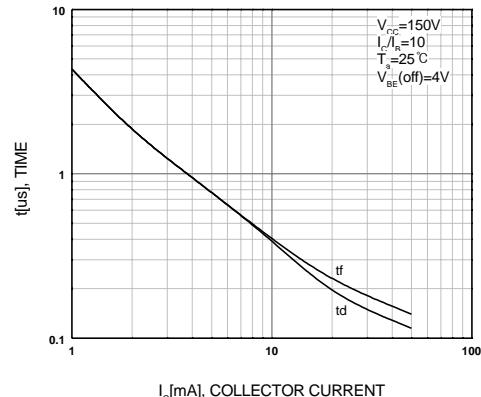


Figure 2. Turn-On Switching Times

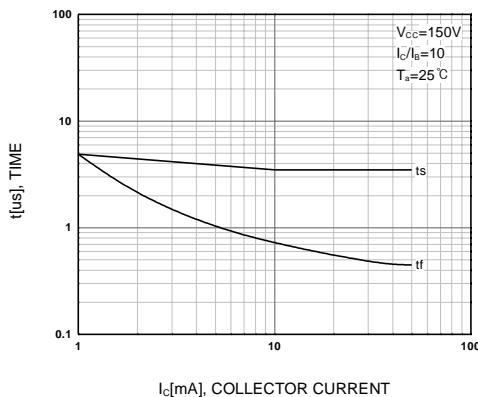


Figure 3. Turn-Off Switching Times

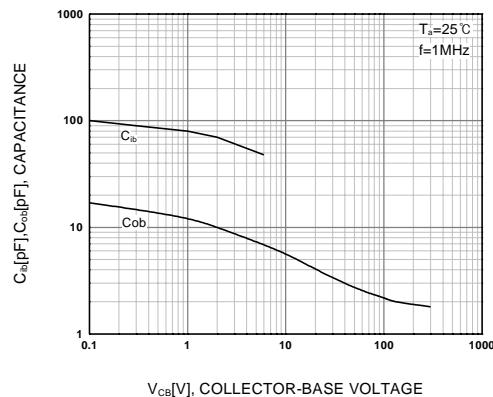


Figure 4. Capacitance

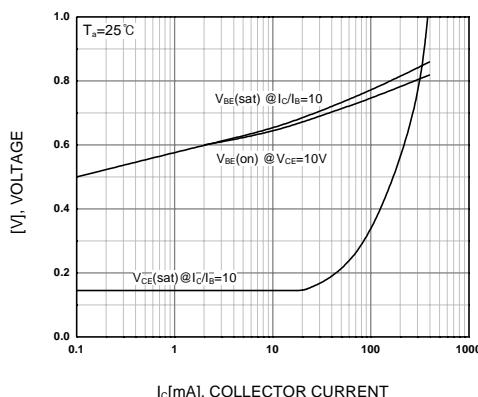


Figure 5. On Voltage

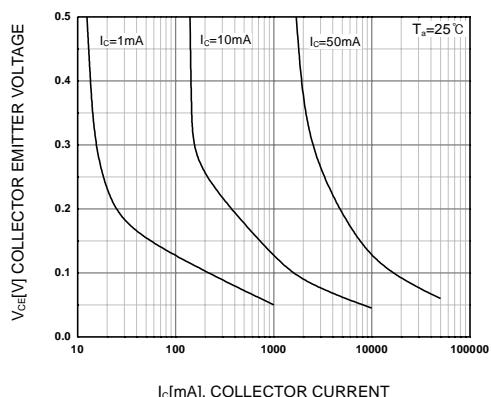


Figure 6. Collector Saturation Region

Typical Characteristics (Continued)

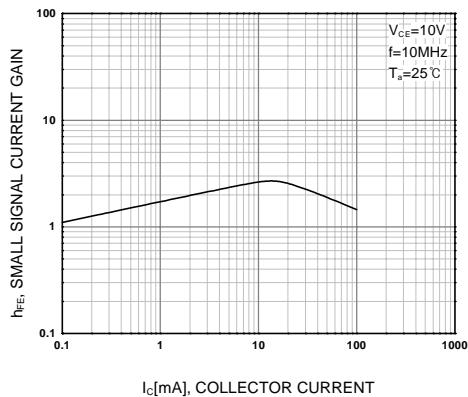


Figure 7. High Frequency Current Gain

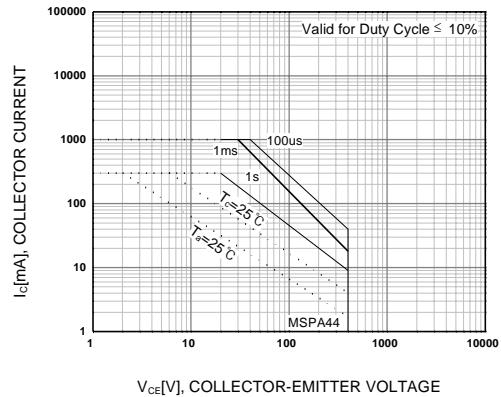
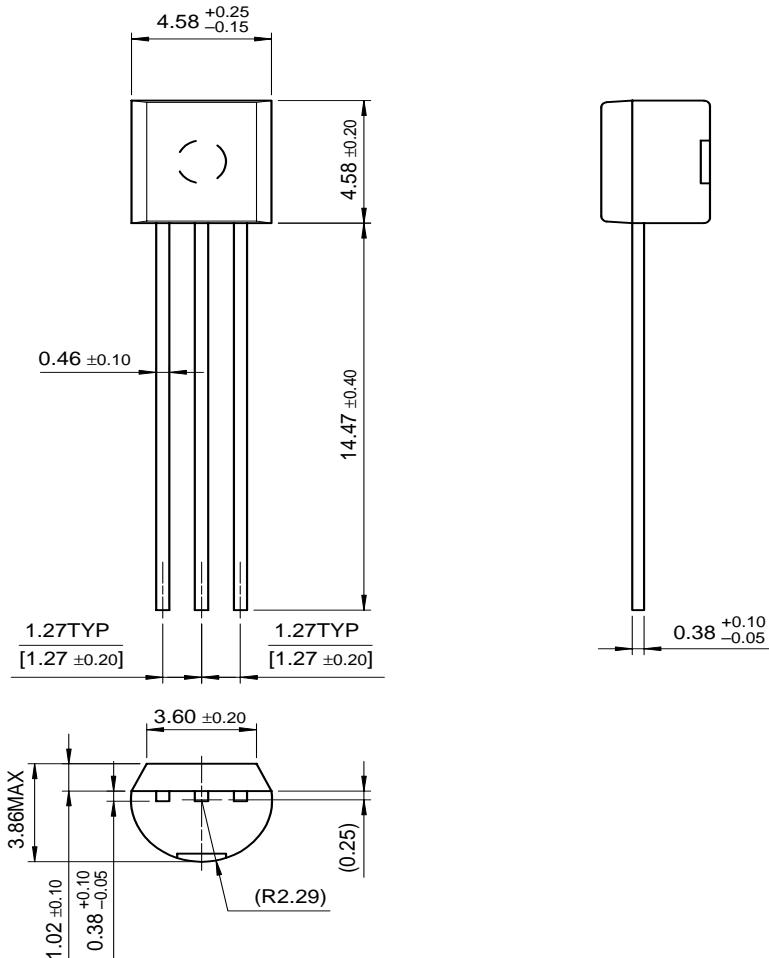


Figure 8. Safe Operating Area

Package Dimensions

TO-92



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E ² CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I ² C™	OCX™	RapidConfigure™	UHC™
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The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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